REMARKS

Initially, Applicants express appreciation to the Examiner for the detailed Official Action provided.

Upon entry of the present paper, claims 25 and 26 will have been amended to correct informalities. Claims 13-26 are pending in the present application, with claims 13 and 23 being in independent form.

Applicants address the rejections provided within the Official Action below and respectfully request reconsideration and withdrawal of the rejections together with an indication of the allowability of claims 13-26 (*i.e.*, all pending claims) in the next Official communication. Such action is respectfully requested and is now believed to be appropriate for at least the reasons provided below.

35 U.S.C. § 112, First Paragraph, Claim Rejections

In the outstanding Official Action, claims 13-26 (*i.e.*, all pending claims) were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, it was asserted that the specification fails to clearly describe the claimed subject matter of n being a positive integer. Applicants respectfully traverse the rejection.

Initially, Applicants note that the present claims recite that n is a positive integer, that $n = 2n'$, and that n' is a positive integer. Thus, the claims necessarily recite that n is a positive integer of at least 2.

Page 9, lines 7-21 of the present application as filed (¶¶[0058]-[0059] of corresponding U.S. Pat. Appl. Pub. No. 2007/0208919) disclose an embodiment of the

present application in which addresses are successive in the sequence of: L^{th} line, $(L+2)^{th}$ line, $(L+1)^{th}$ line, and $(L+3)^{th}$ line. According to such an embodiment, $n = 2$ and $n' = 1$, both of which are clearly positive integers. Figure 6 shows an example of mapping memory addresses according to the above-described embodiment while Figure 7 shows a diagram of a memory access sequence in accordance with such an embodiment, all of which are shown as being positive integers.

Furthermore, the above-noted portion of the specification further discloses that, "in motion compensation processing, when the field is estimated, the access is performed by skipping a line of the reference image." In order to skip a line of the reference image, n' must be an integer other than 0 (*i.e.*, a positive integer or a negative integer), and thus, n must also be an integer other than 0 (*i.e.*, a positive integer of at least 2 or a negative integer of at least -2). Accordingly, at least in view of the above, Applicants respectfully submit that the specification of the present application clearly supports the feature of wherein n and n' are positive integers.

In this regard, Applicants note that § 2163 of the Manual of Patent Examining Procedure explicitly recites that "the description need not be in *ipsis verbis* [*i.e.*, 'in the same words'] to be sufficient." (*citing Vas-Cath*, 935 F.2d at 1563, 19 USPQ2d at 1116; *Martin v. Johnson*, 454 F.2d 746, 751, 172 USPQ 391, 395 (CCPA 1972)). Thus, while the specification of the present application does not explicitly recite that n and n' are positive integers, when the totality of the specification is considered, such a feature is clearly supported at least by the embodiment of the present application as described on page 9, lines 7-21 of the present application as filed and at least by Figures 6 and 7(a)-(c) of Applicants' drawings.

Accordingly, at least in view of the above, Applicants respectfully submit that the rejection under 35 U.S.C. § 112, first paragraph, is improper and respectfully request withdrawal thereof in the next Official communication.

35 U.S.C. § 103 Rejection of Independent Claims 13 and 23

In the outstanding Official Action, independent claims 13 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,075,899 to Yoshioka et al. (hereinafter "YOSHIOKA") in view of U.S. Pat. Appl. Pub. No. 2002/0196260 to Candler et al. (hereinafter "CANDLER"). Applicants respectfully traverse the rejection.

In Applicants previous Response, filed concurrently with a Request for Continued Examination on July 6, 2009, Applicants generally argued that YOSHIOKA fails to disclose at least the feature of the present application, as recited by independent claims 13 and 23, of converting access addresses so that a column address of data at a $(K+m)^{th}$ column of an L^{th} line and a column address of data at a K^{th} column of an $(L+n)^{th}$ line, become successive, wherein $n = 2n'$, and K, m, L, n, and n' are positive integers. According to such a feature, column addresses of every other line (or every fourth line, sixth line, etc.) become successive. As a result, in a non-limiting and exemplary embodiment of the present application, when image data is estimated by skipping a line of the image data, such as in motion compensation or motion estimation processing for an interlaced video, the unnecessary transfer load is reduced and the effective bandwidth is improved in a short burst-length access such as a rectangular access.

In the outstanding Official Action, it is acknowledged, on page 4 of the Detailed Action portion, that YOSHIOKA fails to disclose the feature of the present application of

L, n, and n' being positive integers, resulting in a positive $(L+n)^{th}$ line not being read.[1] In this regard, with respect to the assertion that an $(L+n)^{th}$ line is not read, Applicants note that column addresses are converted such that an $(L)^{th}$ line and an $(L+n)^{th}$ line are successive, and thus, an $(L)^{th}$ line and an $(L+n)^{th}$ are both read in a first access when the column addresses are accessed in a burst mode. However, the data at an $(L+n')^{th}$ line is not read in the first access when the column addresses are accessed in the burst mode (*see* page 9, lines 11-13 of the present application as filed (¶[0059] of corresponding U.S. Pat. Appl. Pub. No. 2007/0208919)). For example, in the embodiment of the present application where n' = 1 and n = 2, lines (L) and (L+2) are successive and are read, while data at line (L+1) is not read. Notwithstanding the above, Applicants continue to submit that YOSHIOKA fails to disclose the feature of the present application of L, n, and n' being positive integers and believe that such a submission remains acknowledged by the outstanding Official Action.

In the outstanding Official Action, it is asserted that CANDLER discloses determining minimum offset parameters for skipping rows of pixels to be read with each new frame of data from a burst memory, and thus, that CANDLER discloses the feature of the present application of L, n, and n' being positive integers. Applicants respectfully disagree.

CANDLER discloses an image data processing method and system that receives image data from a burst memory buffer and provides output image data to a vertical filter for filtering the image data (CANDLER, Abstract). According to CANDLER, image

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[1] Applicants note that the Examine has acknowledged that YOSHIOKA fails to disclose that an (L+n) line is not read, instead of an $(L+n)^{th}$ line. In this regard, Applicants believe that this was an inadvertent typographical error, and thus, have interpreted the Examiner's acknowledgement to indicate that that an $(L+n)^{th}$ line is not read.

data is read from a burst-based memory 12 in a burst mode and stored in a burst buffer 14 (CANDLER, ¶[0088]). Certain data is then transferred from the burst buffer 14 to a vertical input buffer 16 for processing by a vertical filter 18 (CANDLER, ¶[0088]). According to CANDLER, a geometry engine module 24 generates tags (parameters) for the image data that is to be transferred from the burst buffer 14 to the vertical input buffer 16 for processing of the image data (CANDLER, ¶[0090] and ¶[0096]). The geometry engine module 24 determines which image data, of the image data stored in the burst buffer 14, is required for processing, and thus, provides for efficient use of the vertical input buffer 16 by only storing certain image data that is required for processing in the vertical input buffer 16 (CANDLER, ¶[0091]).

In determining which image data is required for processing, CANDLER discloses that it is first determined whether a new frame of data is being sent from the burst buffer 14 at step (52). A frame is a series of blocks that need to be processed so that an image can be generated, and, according to CANDLER, the determination is made based on the tag generated by the geometry engine module 24. At step (54) the offset of the frame (*i.e.*, series of blocks) is determined based on the tag generated by the geometry engine module 24. This is determined so that it can be determined which rows of data need to be processed and which rows of data can be "skipped" (*i.e.*, which rows of data are not required for processing).

At step (56), a row of data is read from the burst buffer 14. At step (58), it is determined whether the row of data is required for processing or whether it should be "skipped". If the row of data is determined to be required for processing by step (58), then the data is written to a row of the vertical input buffer 16. Otherwise, if the data is

determined to not be required for processing by step (58), then the data is "skipped" and not written to the vertical input buffer 16. After the determination is made at step (58), "[t]he next row of data is then *read* from the burst buffer 14 by step (56)" (emphasis added) (*see* CANDLER, ¶¶[0096]-[0098]).

According to CANDLER, *each* row of data is read from the burst buffer 14 to determine whether the row of data needs to be stored in the vertical input buffer 16 (CANDLER, ¶[0098], lines 7-14).

Therefore, in view of the above, CANDLER discloses that each row of data is read from the burst buffer 14 to determine whether a row needs to be stored in the vertical input buffer 16 for processing or whether the row can be "skipped." In other words, the "skipping" of the data as disclosed by CANDLER merely refers to not writing the data in the vertical input buffer 16 and does not refer to not reading a row of data from the burst buffer 14. Accordingly, Applicants submit that CANDLER does not appear to disclose that data at a $(L+n')^{th}$ is not read when data at a $(L)^{th}$ line is read in a burst mode and when the column addresses of data at an $(L)^{th}$ line and the column address of data at an $(L+n)^{th}$ line are converted to be successive, wherein $n = 2n'$ and n and n' are positive integers, as generally recited by independent claims 13 and 23 of the present application.

In addition to, and independently of, the above, Applicants further note that CANDLER does not even appear to disclose converting access addresses as recited by independent claims 13 and 23. To the contrary, CANDLER merely discloses that it is determined whether the rows of data are to be "skipped" based upon the content of the rows of data. In this regard, Applicants submit that "skipping" rows based upon their

content cannot be reasonably interpreted to disclose converting access addresses. Moreover, "skipping" data based upon the content of the data cannot be reasonably interpreted to disclose converting accesses addresses based upon a fixed relationship as recited by independent claims 13 and 23 of the present application.

With respect to the above, Applicants note that CANDLER generally relates to the filtering of data which is stored in vertical input buffer 16 for processing (*see, e.g.*, CANDLER, ¶[0091]). As such, Applicants submit that it would be illogical to interpret CANDLER to disclose that data in every other, every fourth, every sixth, etc. line is not read. That is, data cannot be "filtered," as described by CANDLER, unless a content of the data is known. Accordingly, Applicants submit that CANDLER discloses that data in each line in burst buffer 14 is read and that it is determined whether the data needs to be written in vertical input buffer 16 or whether the data can be "skipped" for filtering the data that is stored in vertical input buffer 16. In contradistinction, in a non-limiting and exemplary embodiment of the present application, data is estimated, such as in motion estimation processing for an interlaced video. Accordingly, rows of data are not merely "skipped," as recited by CANDLER, but the rows of data are not read.

At least in view of the above, Applicants respectfully submit that YOSHIOKA and CANDLER, whether considered alone or together in any proper combination thereof, fail to disclose or render obvious each and every feature recited by independent claims 13 and 23. Thus, Applicants respectfully request that the 35 U.S.C. § 103 rejection of independent claims 13 and 23 is withdrawn and the independent claims 13 and 23 are indicated to be allowable in the next Official communication

35 U.S.C. § 103 Rejections of Dependent Claims 14-22 and 24-26

In the outstanding Official Action, dependent claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over YOSHIOKA in view CANDLER. Dependent claim 15 was rejected under § 103(a) as being unpatentable over YOSHIOKA in view of CANDLER and further in view of U.S. Pat. No. 6,745,320 to Mitsuishi (hereinafter "MITSUISHI"). Lastly, dependent claims 16-22 and 24-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over YOSHIOKA in view of CANDLER and in view of MITSUISHI and further in view of U.S. Pat. No. 6,807,311 to Callway et al. (hereinafter "CALLWAY"). Applicants respectfully traverse all of these rejections.

Applicants initially note that each of dependent claims 14-22 and 24-26 are directly or indirectly dependent from independent claim 13, which is submitted to be allowable for at least for the reasons discussed *supra*. In this regard, Applicants submit that MITSUISHI and CALLWAY fail to cure the deficiencies of YOSHIOKA and CANDLER, either singularly or in the combination set forth in the outstanding Official Action. To the contrary, MITSUISHI is merely asserted to disclose a general purpose processor with registers available for high speed processing, while CALLWAY merely appears to disclose data compression as opposed to data estimation. Thus, it is submitted that the combination of the references set forth in the outstanding Official Action fails to result in Applicants' invention, as defined by independent claims 13 and 23. Accordingly, the dependent claims are also submitted to be allowable for at least the reasons discussed *supra*. Furthermore, the dependent claims recite additional features which further define the present invention over the references of record.

At least in view of the above, Applicants respectfully submit that each and every pending claim of the present application (*i.e.*, claims 13-26) meets the requirements for

patentability. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections and to indicate the allowance of each and every pending claim in the present application.

CONCLUSION

In view of the fact that none of the art of record, whether considered alone, or in any proper combination thereof, discloses or renders obvious the present invention, and in further view of the above remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate.

Should the Commissioner determine that an extension of time is required in order to render this response timely and/or complete, a formal request for an extension of time, under 37 C.F.R. §1.136(a), is herewith made in an amount equal to the time period required to render this response timely and/or complete. The Commissioner is authorized to charge any required extension of time fee under 37 C.F.R. §1.17 to Deposit Account No. 19-0089.

If there should be any questions concerning this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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